

## Composite Repair System, Phase I

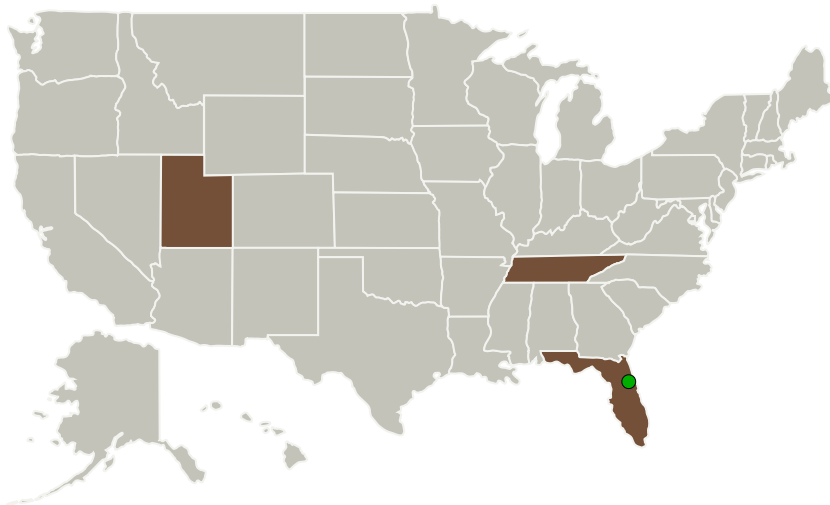
Completed Technology Project (2017 - 2018)



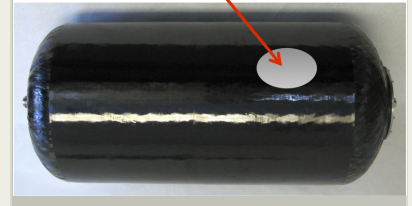
## Project Introduction

GTL has developed an innovative composite repair methodology known as the Composite Repair System (CRS). In this phase I effort, CRS is being developed for the repair of damaged induced in thin-laminate composite cryotanks. In applying CRS to damaged composite structures, the required level of structural capacity is recovered to within a predetermined percentage of its original performance after being damaged. GTL's CRS offers a repair method that reduces complexity and time required to perform repairs. Designed to repair damage in locations with minimal access, the CRS repairs can be made at any point after laminate fabrication. The CRS can be used to perform launch vehicle repairs in assembled states while on the launch platform. In the phase I effort, GTL will perform initial feasibility studies and tests to validate the anticipated performance capacities of the CRS repairs. At the close of this effort, the design will be refined. At this time, initial studies will be performed to incorporate "smart" sensing technology into the repairs. In the phase II effort, GTL will extend this analysis and apply this "smart" technology to refined repair patches. These patches will be tested on one of GTL's pre-existing cryotanks in the phase II effort.

## Primary U.S. Work Locations and Key Partners



Composite Repair System  
can patch cryotank damage



Composite Repair System,  
Phase I Briefing Chart Image

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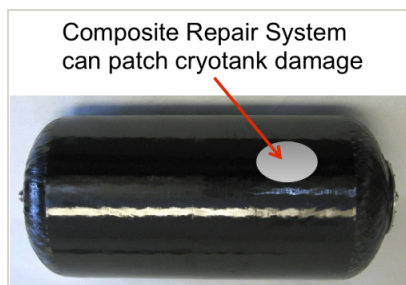


Organizations Performing Work	Role	Type	Location
Gloyer-Taylor Laboratories LLC	Lead Organization	Industry	Tullahoma, Tennessee
Brigham Young University-Provo	Supporting Organization	Academia	Provo, Utah
● Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida

## Primary U.S. Work Locations

Florida	Tennessee
Utah	

## Images



## Briefing Chart Image

Composite Repair System, Phase I  
Briefing Chart Image  
(<https://techport.nasa.gov/image/131271>)

## Organizational Responsibility

## Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

## Lead Organization:

Gloyer-Taylor Laboratories LLC

## Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

## Program Director:

Jason L Kessler

## Program Manager:

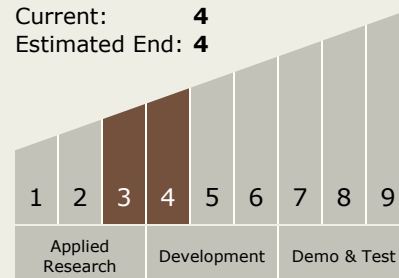
Carlos Torrez

## Principal Investigator:

Zachary Taylor

## Technology Maturity (TRL)

Start: 3  
Current: 4  
Estimated End: 4



# Composite Repair System, Phase I

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## Technology Areas

### Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - └ TX12.1 Materials
    - └ TX12.1.1 Lightweight Structural Materials

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System